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(54) PRODUCTION OF GLASS CERAMIC PRODUCT

(57)Abstract:

PURPOSE: To produce the title glass ceramic product having excellent resistance to wear and impact by forming glass of $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-ZnO-TiO}_2$ and ZrO_2 , etc., having a specified composition, and reheating the glass while controlling the temp. increasing rate at the low-temp. region.

CONSTITUTION: Glass consisting, by weight, of 30W65% SiO_2 , 5W25% Al_2O_3 , 10.5W40% ZnO , 2W15% TiO_2 and ZrO_2 , 0W20% MgO , 0W15% ≥ 1 kind among CaO , SrO , and BaO , 0W5% B_2O_3 , 0W10% ≥ 1 kind among La_2O_3 , Y_2O_3 , Cd_2O_3 , Ta_2O_5 , Nb_2O_5 , and WO_3 , 0W5% P_2O_5 , 0W5% F , 0W2% SnO_2 , and 0W1% As_2O_3 and Sb_2O_3 is melted and then quenched while being formed. The glass is reheated while controlling the temp. increasing rate at the low-temp. region for forming nuclei to $\geq 2.5^\circ\text{C/min}$, and further kept at a high-temp. region to form crystal nuclei and then to form crystallites. No trouble such as cracking is caused by this method, and a product having excellent resistance to wear and impact can be obtained.

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